Publications by Jared Miller

A) JOURNAL PAPERS (PUBLISHED)

1) J. Miller, Y. Zheng, M. Sznaier, and A. Papachristodoulou, "Decomposed structured subsets for semidefinite and sum-of-squares optimization," *Automatica*, vol. 137, pp. 110–125, 2022

2) J. Miller, D. Henrion, and M. Sznaier, "Peak Estimation Recovery and Safety Analysis," *IEEE Control Systems Letters*, vol. 5, no. 6, pp. 1982–1987, 2021

3) J. Miller, M. A. Al-Radhawi, and E. D. Sontag, "Mediating Ribosomal Competition by Splitting Pools," *IEEE Control Systems Letters*, vol. 5, no. 5, pp. 1555–1560, 2021

B) JOURNAL PAPERS (SUBMITTED)

4) J. Miller and M. Sznaier, "Bounding the Distance to Unsafe Sets with Convex Optimization," 2021. arXiv: 2110.14047

C) CONFERENCE PROCEEDINGS (PUBLISHED)

5) J. Miller, D. Henrion, M. Sznaier, and M. Korda, "Peak Estimation for Uncertain and Switched Systems," in *2021 60th IEEE Conference on Decision and Control (CDC)*, pp. 3222–3228, 2021

6) J. Miller, R. Singh, and M. Sznaier, "MIMO System Identification by Randomized Active-Set Methods," in *2020 59th IEEE Conference on Decision and Control (CDC)*, pp. 2246–2251, 2020

7) J. Miller, Y. Zheng, M. Sznaier, and A. Papachristodoulou, "Decomposed Structured Subsets for Semidefinite Optimization," in *2020 21st IFAC World Congress*, 2020

8) C. Wu, J. Miller, Y. Chang, M. Sznaier, and J. Dy, "Solving Interpretable Kernel Dimensionality Reduction," in *Advances in Neural Information Processing Systems* (H. Wallach, H. Larochelle, A. Beygelzimer, F. d'Alché-Buc, E. Fox, and R. Garnett, eds.), vol. 32, pp. 7915–7925, Curran Associates, Inc., 2019

9) J. Miller, Y. Zheng, B. Roig-Solvas, M. Sznaier, and A. Papachristodoulou, "Chordal Decomposition in Rank Minimized Semidefinite Programs with Applications to Subspace Clustering," in *2019 IEEE 58th Conference on Decision and Control (CDC)*, pp. 4916–4921, 2019

10) J. Miller and B. Shafai, "A Model of Heave Dynamics for Bagged Air Cushioned Vehicles," in *2019 IEEE Conference on Control Technology and Applications (CCTA)*, pp. 976–981, 2019

11) B. Taskazan, J. Miller, U. Inyang-Udoh, O. Camps, and M. Sznaier, "Domain Adaptation Based Fault Detection in Label Imbalanced Cyberphysical Systems," in *2019 IEEE Conference on Control Technology and Applications (CCTA)*, pp. 142–147, 2019

D) CONFERENCE PROCEEDINGS (ACCEPTED BUT NOT YET PUBLISHED)

12) J. Miller, T. Dai, and M. Sznaier, "Data-Driven Superstabilizing Control of Error-in-Variables Discrete-Time Linear Systems," 2022 (CDC 2022)

13) J. Miller and M. Sznaier, "Bounding the Distance of Closest Approach to Unsafe Sets with Occupation Measures," in *2022 61st IEEE Conference on Decision and Control (CDC)*, 2022 (CDC 2022)

14) F. Bečanović, J. Miller, V. Bonnet, K. Jovanović, and S. Mohammed, "Assessing the Quality of a Set of Basis Functions for Inverse Optimal Control via Projection onto Global Minimizers," 2022 (CDC 2022)

15) J. Miller and M. Sznaier, "Facial Input Decompositions for Robust Peak Estimation under Polyhedral Uncertainty," 2022. arXiv: 2112.14838 (ROCOND 2022)

E) SEMINARS

16) Bounding the Distance to Unsafe Sets with Convex Optimization, DCSD Rising Stars, 2nd Modeling, Estimation and Control Conference, Jersey City, October 2-5 2022 (To Occur)

17) Tutorials about Convexity, Interior Point Methods, Frank-Wolfe algorithms (with applications to system identification), and Polynomial Optimization, June 27, 2022, From Data to Control, Israeli Association of Automatic Control (with M. Sznaier).

18) "Bounding distances to unsafe sets", June 16, 2022, IfA Coffee Talks, ETH Zurich.

19) "Bounding distances to unsafe sets", June 14, 2022, LA3 Meeting, EPFL Lausanne.

20) "Bounding distances to unsafe sets", June 3, 2022, Journées SMAI MODE, University of Limoges (XLIM).

21) Tutorials about Interior Point Methods, Polynomial Optimization, Frank-Wolfe algorithms and variations, and SDP approximations, May 16-20, Sparsity and Big Data in Control, Systems Identification, and Machine Learning, European Embedded Control Institute. Related to (17).

22) "Bounding distances to unsafe sets", April 14, 2022, Conic Linear Optimization for Computer-Assisted Proofs, Mathematisches Forschungsinstitut Oberwolfach (MFO). Related to (20).

23) "Bounding distances to unsafe sets", June 28, 2021, Brainstorming days on measure and polynomial optimization (BrainPOP), LAAS-CNRS. Related to (20).

24) "Data-Driven Peak and Reachability Set Estimation", May 25, 2021, MS112 Methods of Learning Dynamical Systems for Control, SIAM Conference on Dynamical Systems. Related to (32).

25) "Analysis and Control of Time-Delay Systems with Occupation Measures", May 3, 2021, BrainPOP, LAAS-CNRS. Work not yet published, in preparation.

26) "Exploiting Structure in Rank-Constrained and Approximated Semidefinite Programs", December 19, 2019, TISEM Operations Research Seminar, Tilburg University. Related to (17; 25).

F) POSTER SESSIONS

27) "Safety Analysis using Distance Estimation and Measures." August 24, 2022. CLEVR-AI MURI Yearly Review Meeting, Northeastern University.

28) "Exploiting SDP Structure Yields Tighter Approximations." April 9, 2020. RISE, Northeastern University (remote). Related to (17).

29) "Exploiting SDP Structure Yields Tighter Approximations." February 24, 2020. IPAM Control, Learning and Optimization workshop, University of California, Los Angeles. Related to (17).

30) "Chordal Decompositions in Rank Minimized SDPs." May 30-31, 2019. Learning for Decision and Control (L4DC), Massachusetts Institute of Technology. Related to (25).

31) "Chordal Decompositions in Rank Minimized SDPs." May 10, 2019. New England Machine Learning Day, Northeastern University. Related to (25).

32) "Scattered data interpolation through B-spline wavelets and the Elastic Net." April 14, 2017. RISE, Northeastern University.

33) "A parallelized Python-based Multi-Point Thomson Scattering analysis in NSTX-U." October 29, 2014. 56th Annual APS Plasma Physics Conference, New Orleans.